

# Method for Disabling and Destroying All Ion-Thruster Dependent Very-Low Earth Orbit Satellites i.e. Starlink

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## Introduction

With 12,000 satellites planned almost half of which are already in place, a scenario can be envisioned in which the Starlink constellation ultimately becomes more of a liability than an asset. For marginally faster satellite Internet, absurd numbers of satellites requiring a constant, gentle nudge in the form of solar power-enabled ionic thrust are required. For these satellites to function at maximum bandwidth, they must constantly skim the exosphere; a highly unstable proposition for a number of reasons.

## Abstract

Should the network need to be disabled/removed for the protection of non-VLEO satellites belonging to all nations of the world (for example, if a meteorite destroys a single Starlink satellite, leading to a chain reaction) it may be necessary to take the constellation down quickly and without the use of anti-satellite weapons that would only make the space debris problem worse.

VLEO satellites, fortunately, can be allowed to burn up in the atmosphere within a few days if their ion thrusters cease to function for any reason. The simplest way to physically disable these thrusters is to remotely flood the ionic thrust actuator (an ion chamber,) located by necessity on the side of the satellites facing toward the ground, with electricity. The question is: How do we deliver it in such a way so as to bypass any shielding mechanism meant to guard against such a thing, if any exists?

Soliton waves, in addition to being useful for their ground and sea-penetrating radar as well as X-Ray Laser Continual Confinement may need to be applied toward the end of disabling the ion drive of any or all of these VLEO satellites.

Taking inspiration from osmotic pressure therapy as well as the way that the buoyancy of air pockets in submerged solid objects can prevent water from filling those pockets, I propose that it is a feasibility to use a series of high-powered soliton emitters forward-deployed to multiple parts of the world to effectively corrupt, perhaps catastrophically, the ionic convection process by flooding the ion-rich compartment of the ionic drive with electrons, bringing their charge to a level more electrically negative than the electrons in the neutralization chamber, and even more remarkably, can do this from the distance of ~105 Miles. This process could then be repeated for each successive satellite as it flies by overhead with a few high-powered pulses aimed at each satellite.

Much like the flow of Freon in an air conditioner's compressor in the case where an air conditioner is not left off for at least a few minutes after a

compressor shut-down, a state can be induced in which the system lacks to power to essentially overwhelm its previous work. It could also be compared to an air embolism in the human body, causing the heart to struggle futilely to pump air and to fail entirely in short order.

The reason why this approach would work more effectively than say, an X-Ray Laser similar to the one I mentioned is twofold: For one, X-Rays, although they would deliver large quantities of electrons to the ion chamber very quickly, would also deliver electrons to the neutralization chamber and perhaps work against the goal of making it so that the charge in the ion chamber (at the bottom-most part of the system) substantially exceeds that of the neutralization chamber. X-Rays would tend to electrify all elements of the chamber equally. While solitons would normally pass through most low-density matter such as air or even water, they would tend to interact strongly with pure ions at such high concentrations. Any electrons associated with the soliton wave, that happen to make it into the neutralization chamber, in this case, would, due to their properties tend to pass through negatively charged gasses. What's more, while X-Rays might be a tempting choice for the purposes of disabling satellites, such an approach would likely entirely disable the electrical system of the first satellite, something that if it happened repeatedly might trigger an automated protocol that tips the satellites onto their sides, an act that would, even if done for the wrong reasons, would effectively protect the system from subsequent soliton pulses. It would also lead, most likely, to the eventual identification of sabotage, whereas an ion chamber electrical injection of such a targeted nature could be written off and masked by a CME event.

## **Conclusion**

When an Electron-Injection-By-Soliton type attack is launched, if carried out properly, the result would be the mass de-orbiting of all Starlink satellites before situational awareness could be acquired at Starlink. It may be advisable to rapidly prepare this capability to guard against the possibility of one piece of space debris being turned into many should the situation call for it.